



Treatment by Generator

Technical Information Memorandum

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Purpose

This Technical Information Memorandum contains treatment by generator (TBG) guidance on how generators may treat their own dangerous waste(s) on-site, in accumulation tanks or containers, without a dangerous waste treatment permit. This document replaces Technical Information Memorandum, #86-3, Revised July 1993.

Section One explains previous guidance for treatment by generator. Section Two provides information on treatment by generator background. Section Three describes the guidance that generators can now use to proceed with treatment by generator. Section Four provides general standards (including definitions) that apply to all generators performing treatment by generator. These sections are followed by a list of Ecology contacts.

Section One: Previous Guidance

Ecology first provided guidance on treatment by generator in TIM 86-3, dated September 22, 1986. The initial guidance, while useful, also generated questions on treatment by generator. These questions showed a need for additional guidance and clarity on the subject. This is particularly apparent when Ecology and the generator must decide between on-site treatment types or processes, versus off-site treatments or processes at a permitted treatment, storage, or disposal facility (TSD) or a recycling facility.

This revised TIM offers the following benefits for generators:

- ◆ more options for utilizing treatment by generator;
- ◆ less coordination with Ecology, since case-by-case approval is no longer required; and
- ◆ better guidance on how to properly treat hazardous waste so that human health and the environment are protected.

The Department of Ecology actively promotes treatment by generator options for several reasons. The Hazardous Waste Management Act (RCW 70.105.150) lists a waste management hierarchy where treatment is preferred

over disposal of waste. By encouraging proper on-site treatment, Ecology is working towards the goals of that hierarchy. It should be noted that waste reduction is the ultimate goal.

The Washington State Hazardous Waste Plan (January, 1992) recommends a "close to home" policy. The goal of this policy is "self-sufficiency on the part of individual generators and TSDs, the state as a whole, and the Pacific Northwest region." Part 2.3 of the Plan states that "The management of wastes on-site should be more actively promoted, to the extent this is environmentally desirable and economically feasible. If other environmental factors are equal, on-site or local management is preferred because it minimizes transportation risks, limits the transfer of risk to other communities, and results in the application of appropriate, waste-specific technologies."

Lastly, the *Ecology Regulatory Impediment Study* (February, 1993) found that treatment by generator "is not being used to full advantage." The study states that rules governing treatment by generator lack clear authority, are not self-implementing, and do not describe treatment by generator administrative procedures. This revised TIM solves those problems.

This guidance document is to be used in conjunction with the state *Dangerous Waste Regulations*, Chapter 173-303 WAC, which were amended in 1993 to clarify generator treatment.

Section Two: Treatment by Generator Background

Currently, generator treatment of hazardous wastes is not directly addressed in the federal hazardous waste regulations. However, the state *Dangerous Waste Regulations* were amended in 1993 to address treatment by generator at WAC 173-303-170(3)(b). EPA provided their treatment by generator interpretation in a Federal Register preamble statement on March 24, 1986.

The position set forth in that preamble, 51 FR 10168, reads as follows:

"Of course, no permitting would be required if a generator chooses to treat their hazardous waste in the generator's accumulation tanks or containers in conformance with the requirements of subsection 262.34 and Subparts J or I of Part 265.

Nothing in subsection 262.34 precludes a generator from treating waste when it is in an accumulation tank or container covered by that provision. Under the existing Subtitle C system, EPA has established standards for tanks and containers which apply to both the storage and treatment of hazardous waste.

These requirements are designed to ensure that the integrity of the tank or container is not breached. Thus, the same standards apply to a tank or a container, regardless of whether treatment or storage is occurring.

Since the same standards apply to treatment in tanks as applies to storage in tanks, and since EPA allows for limited on-site

storage without the need for a permit or interim status (90 days for over 1000 kg/mo generators and 180/270 days for 100-1000 kg/mo generators), the Agency believes that treatment in accumulation tanks or containers is permissible under the existing rules, provided the tanks or containers are operated strictly in compliance with all applicable standards. Therefore, generators of 100-1000 kg/mo are not required to obtain interim status and a RCRA permit if the only on-site management which they perform is treatment in an accumulation tank or container that is exempt from permitting during periods of accumulation (180 or 270 days)."

Early guidance from the EPA confirmed that treatment by generator applies to all generators who accumulate waste in compliance with 40 CFR 262.34 (WAC 173-303-200 and -201). By deduction, therefore, it does not apply to Conditionally Exempt Small Quantity Generators (CESQGs), who are referred to as Small Quantity Generators (SQGs) in this state. However, Ecology believes that treatment by generator is an appropriate management technique for SQGs and encourages SQGs to manage hazardous wastes by an appropriate treatment by generator method according to this guidance and all applicable local requirements (if any).

There are some restrictions on the type of wastes that may be treated, and what treatment methods are allowed. For example, detonation and open burning are not considered treatment by generator since they are recognized as a method of disposal, that is not allowed under 40 CFR Section 262.34. Treatment by generator in ways other than in tanks or containers (for example, by incineration, open burning, land treatment, or treatment in surface impoundments) still requires a TSD facility permit (for exception, see "Solid State-Only Dangerous Wastes Treated in Units Other Than Tanks or Containers").

Section Three: Treatment Specific Guidance

Ecology encourages treatment by generator when waste reduction possibilities have been exhausted, under certain conditions. A generator conducting treatment by generator does not need to obtain a TSD permit, or comply with interim status requirements. The following guidance does not apply to generators recycling materials on-site. This is because the reclamation process itself is generally exempt from treatment by generator or treatment permitting requirements.

By following the guidance in this TIM, the generator may use a specific waste treatment method, a treatment method that is not one of the specific Fact Sheet options, or treat a solid state-only waste in a unit other than a tank or container, without Ecology review, written approval or a permit. However, the department may determine, on a case-by-case basis, that specific waste management practices pose a threat to public health or the

environment. If this occurs, Ecology may require the generator to stop treatment and/or apply for a treatment permit. In rare circumstances a generator may need to enter into a consent order, which is a written agreement, with Ecology to proceed with a specific treatment process.

This TIM describes the self-implementing guidance which is as follows:

Fact Sheets

Ecology believes that many generators may be able to treat their own wastes on-site, in containers or tanks, by using guidance contained in Focus Sheets that discuss specific types of treatment. The treatment may be performed by a person other than the generator (e.g., a contractor with a mobile treatment unit); however, it must be done at the site where the waste is generated. In addition to the guidance found in the appropriate Focus Sheet (and for treatment methods that are not one of the specific options), the standards in Section Four of this TIM apply and the rule amendment at WAC 173-303-170(3).

The Fact Sheets are self-implementing tools that generators can use for specific treatment methods. The following treatment methods are covered by six separate Fact Sheets:

Filtration	Carbon adsorption
Separation	Elementary neutralization
Evaporation	Solidification

These types of treatment must be performed in the generator's dangerous waste accumulation tank or container (see definitions below). Multi-stage, multi-vessel treatment (for example, treatment using more than one process in a series of vessels) is allowed.

Solid State-only Dangerous Wastes Treated in Units other than Tanks or Containers

Treatment of solid state-only wastes (e.g., salt cake) may be performed in units other than tanks or containers. Such wastes must not contain free liquids as determined by the Paint Filter Liquids Test, Method 9095 of the EPA Publication Number SW-846, prior to treatment. In this situation, the state is not constrained by the federal regulations, since the wastes are not regulated under RCRA. For the same reason, Ecology is not constrained by EPA guidance (i.e., preamble language) for such wastes. However, Ecology encourages generators to use units other than tanks or containers as a "last resort" and after the option of using a tank or container has been thoroughly examined.

Generators may treat solid state-only dangerous waste in units other than tanks or containers, provided it is completed within the applicable accumulation time frame (either 90 or 180 days). The treatment unit must be designed, constructed and operated in a manner that prevents a release of waste and waste constituents. The treatment must not adversely affect the health of employees or the public. In addition, excessive noise is not

allowed. Negative aesthetic impact on the use of adjacent property must be prevented. Lastly, inspections must be routinely performed and repairs conducted promptly.

Section Four: Standards that Apply to All Generators

Performing Treatment by Generator

The following standards apply to all generators who wish to perform treatment by generator, except small quantity generators [SQGs; see WAC 173-303-070(8)].

SQGs are encouraged to follow the General Performance and Safety Standards (see below), Ecology's recommended best management practices, any other standards contained herein that protect human health and the environment, and all applicable local regulations. Any situation that poses an actual or potential threat to public health or the environment may affect the conditional exemption of a SQG and cause them to become fully regulated under Chapter 173-303 WAC. Also, see below for applicability of treatment by generator at TSDs.

Some of these standards will not be relevant to the particular treatment by generator situation. For example, tank standards will not apply for those treating in containers only; cleanup standards will only apply if there is a release to the environment.

Accumulation Time Limit Standards

The tank or container in which the treatment occurs must be appropriately marked with the date the accumulation period began. It must be emptied every 90 days (or 180 days for generators of 220-2200 lb/mo) and operated in compliance with certain portions of WAC 173-303-630 and WAC 173-303-640. There is no accumulation time limit for wastes being appropriately accumulated at satellite accumulation areas prior to treatment as long as the volume limit for satellite areas is not exceeded.

Exceeding the 90 (or 180) day limit constitutes storage which requires a storage permit. Any residues removed from a 90-day treatment unit remain subject to the 90-day accumulation time limit of the original waste placed in the unit. This means that a new 90-day limit does not begin for the residue when it is removed from a 90-day unit. The time limits also apply for multistage, multi-vessel processes.

Tank Definitions and Standards

"Tank" means a stationary device designed to contain an accumulation of dangerous waste, and which is constructed primarily of non-earthen materials to provide structural support (see WAC 173-303-040). It is not to be confused with, and is not the same as a surface impoundment, waste pile or containment building.

“Tank system” means a dangerous waste storage or treatment tank and its associated ancillary equipment and containment system (see WAC 173-303-040).

The following requirements for generators with accumulation tanks apply to treatment by generator processes in tanks (for generators of between 220 and 2200 pounds per month, the tank management standards in WAC 173-303-202 apply, instead):

- 1) WAC 173-303-640 sets treatment standards for tanks. Generators should pay special attention to the limitations of WAC 173-303-640(3),(9),(10), and (11). According to WAC 173-303-200, if the waste is placed in tanks, the generator must comply with WAC 173-303-640 (2) through (10) except for WAC 173-303-640 (8)(c) and the second sentence of WAC 173-303-640 (8)(a) (closure plan, cost estimate for closure, financial responsibility).
- 2) Owners or operators of new tank systems or components must obtain a written assessment. The assessment must be reviewed and certified by an independent, qualified registered professional engineer, attesting that the tank system has sufficient structural integrity and is acceptable for the treatment of dangerous waste. The assessment must show that the foundation, structural support, seams, connections, and pressure controls (if applicable) are adequately designed and that the tank system has sufficient structural strength, compatibility with the waste(s) to be treated, and corrosion protection to ensure that it will not collapse, rupture, or fail. Existing accumulation tanks that will be used for treatment will need to be reassessed if the proposed treatment will place stresses on the tank beyond what it was certified for, or if a major modification is performed. Also, in such cases the integrity assessment schedule may need to be modified.

Container Definition and Standards

“Container” means any portable device in which a material is stored, transported, treated, disposed of, or otherwise handled (see WAC 173-303-040).

The following requirements for generators with accumulation containers also apply to treatment by generator in containers:

- 1) The generator must comply with all applicable parts of WAC 173-303-630, Use and Management of Containers, as referenced in WAC 173-303-200 or -201.
- 2) Generators must ensure that containers have sufficient structural integrity and are acceptable for the treatment of

dangerous waste. This determination is based on applicable factors such as the container composition, structural support, type of cover, seam strength, etc. The container must be compatible with the waste(s) to be treated such that it will not corrode, collapse, rupture, or otherwise fail to contain the dangerous waste during treatment.

General Performance and Safety Standards

The performance standards of WAC 173-303-283 (3) apply to all generators who treat their waste on-site.

In addition, whenever any generator chooses treatment by generator as a waste management option the treatment process may not, under any circumstances:

- (1) Generate extreme heat or pressure, fire or explosion, or violent reaction;
- (2) Produce uncontrolled toxic mists, fumes, dusts, or gases in sufficient quantities to threaten human health or the environment;
- (3) Produce uncontrolled flammable fumes or gases in sufficient quantities to pose a risk of fire or explosions;
- (4) Damage the structural integrity of the facility or device containing the waste; or
- (5) Through other similar means, threaten human health or the environment.

Reporting Standards and Recordkeeping

Notification on Form 2, and Annual Reporting on Ecology's Dangerous Waste Annual Report Forms is required. Notification requirements are found in WAC 173-303-060 and the reporting requirements are in WAC 173-303-220. When notifying on the Form 2, generators must complete the form by following the instructions and note in the comment section:

- (1) Whether the process is treatment by generator.
- (2) Whether the treatment is a multistage and/or multi-vessel process.
- (3) Whether it is being done in accordance with a specific Fact Sheet (or if not, that the TIM and applicable rules are being followed).

The Form 2 must be submitted prior to beginning the treatment process. If the generator already has a RCRA ID#, a revised Form 2 must be submitted. Those generators that have received written Ecology approval for treatment by generator prior to the date of this revised TIM are also required to submit a Form 2.

For annual reporting and generator status determinations, the total quantity (as wet weight) of waste generated prior to treatment and the weight of any remaining material that designates after treatment, must be counted.

The waste prior to treatment and residuals (material remaining after the process) must be designated and managed appropriately. Also, the “derived from” rule [see WAC 173-303-070(2)] applies for listed wastes.

Generators must maintain a written log of the quantity of each dangerous waste managed on-site, the treatment methods, and dates of treatment.

Personnel Training, Preparedness and Prevention, Contingency Plan and Emergency Procedures, and Emergencies

Generators who treat on-site must meet the requirements for facility operators contained in WAC 173-303-330 through 173-303-360. In lieu of the contingency plan and emergency procedures required by WAC 173-303-350 and 173-303-360, if a person generates between 220 pounds (100 kg) and less than 2200 pounds (1000 kg) per month and does not accumulate on-site more than 2200 pounds (1000 kg) of dangerous waste, the reduced standards in 173-303-201(2)(c) apply.

Cleanup Standards

Cleanup of releases at generator sites must include any releases of hazardous waste that pose a threat to human health and the environment. Such cleanups are covered under the “imminent hazard” provisions of RCRA Section 7003, WAC 173-303-050 and -145.

Closure Standards

Closure of 90/180 day generator accumulation units must be done in accordance with applicable closure (and post-closure, if necessary) performance standards.

For tanks, the closure requirements are found in WAC 173-303-640(8), except for (8)(c) and the second sentence of (8)(a). Containers must be closed in accordance with 40 CFR 265.111 and 265.114. These activities may include removal of waste residues with proper disposal and/or decontamination of equipment, structures and soils. Requirements for a closure plan, closure activities, cost estimates for closure, and financial responsibility specified in WAC 173-303-610 and 173-303-620 do not apply. The closure standards for generators of between 220 (100 kg) and 2200 pounds (1000 kg) per month who treat their dangerous waste in tanks must comply with the closure standards in WAC 173-303-202(4).

TSD Standards

TSDs that treat dangerous waste received from off-site may not treat that waste or any waste(s) derived from it according to the treatment by generator provisions. Generators that treat only their own dangerous waste on-site in tanks or containers (or other unit if solid state-only waste) and who have obtained interim status, a full permit, or have a Part B application pending may find it preferable to use treatment by generator rather than continue with the TSD permit process. Such facilities will need to comply with withdrawal of permit and/or closure requirements.

Land Disposal Restriction Standards

Federal land disposal restriction (LDR) requirements (40 CFR 268 which is incorporated by reference at WAC 173-303-140(2)(a)) apply. The generator must develop a Waste Analysis Plan (WAP) for on-site treatment in tanks or containers not subject to permit requirements (i.e., Treatment by Generator) if the treatment is for the purpose of meeting the LDR standards or to make the waste nonhazardous. Compliance with the treatment standards for ignitable and corrosive wastes requires that hazardous constituents “reasonably expected to be present” in the waste be treated to specified standards. The WAP must be maintained as a facility record and filed with Ecology 30 days prior to beginning the treatment activity.

Permit-by-Rule Standards

The permit-by-rule (defined at WAC 173-303-040) provisions of WAC 173-303-802(5) may apply in cases that would seem to qualify as treatment by generator. For example, a generator may treat wastes in a wastewater treatment unit, elementary neutralization unit or totally enclosed treatment facility, thereby discharging a wastewater. When this occurs, the permit by rule regulatory provisions in WAC 173-303-802(5) apply instead of the treatment by generator rules and guidance.

Future Changes and Additional Information

Should EPA or Ecology later decide to modify the accumulation rules or specific standards for treatment in tanks or containers, the generator requirements may change.

For more information on treatment by generator options, contact a hazardous waste specialist at the appropriate phone number provided below, or the Hazardous Waste Technical Assistance and Policy Section at (360) 407-6700.

Northwest Region 425-649-7000
Central Region 509-575-2490
Industrial Section 360-407-6916

Southwest Region 360-407-6300
Eastern Region 509-456-2926
Nuclear Waste 360-407-7100

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